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CHARLES WHITE: SURGEON AND OBSTETRICIAN.*

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TIME and again in these latter days I find my thoughts tracing back, ever more fondly, ever more wistfully, to the home and scenes of boyhood. I take it that this is the case with all of us as middle age makes itself acknowledged, and that more insistently when our way in life leads us "to traverse climes beyond the western main," remote from the land of birth, whether to find ourselves—

"Where wild Oswego spreads her swamps around,
And Niagara stuns with thundering sound."

or settled at ease

"On Torno's cliffs or Pambamarca's side."

More insistently also when the links binding the present with the past have been snapped asunder; when, if not rendered waste like "sweet Auburn," there has come about, however naturally, however inevitably, that through death and dispersal the old home has been broken up; that one can never more revisit it, to live over again with those near and dear the days of old. Gentle, naïve, improvident Oliver Goldsmith—licentiate in medicine, as he claimed, by the by, of a foreign university, though rejected by the London Corporation of Surgeons,—was not forty-two, and had been working at the poem for more than two years, distilling into it his heart's longing, when he published the "Deserted Village." I claim but a year or two more. It is not therefore approaching senility that impels the mind to call back the scenes and events of childhood, but the ever-present pathos of the thought that those things have gone from us—gone irretrievably.

Thus it is that in my own case I find myself time and again picturing a little old-fashioned English parish church, plain enough in all conscience, with no architectural pretensions save an open frame roof of stout Cheshire oaken beams, wrought with

*An Address delivered to the McGill University Medical (Students') Society.

a certain solid grace. It stands there at the outskirts of the village, bathed in Sunday morning sunshine, in the middle of a churchyard flagged with its gravestones after the north country fashion: surrounded again by uneventful meadows leading across to the winding, banked-up Mersey. I picture the walk to it through country lanes, through the stile and so across the fields; I hear the clear but thin sub-acid tinkle of its solitary bell, too often ceasing before the last bit of road has been attained, and entering, see the square high pews with the village school children sitting all along the aisles; whence to open the door and get into the pew one or more youngsters have to be dislodged; and using the form as a step I rise over it and descend into comfortable privacy. Before me rises the old three-decker; I hear the formal "amens" of Davies, the Parish Clerk, in the lowest dock; hear the Cheshire accent of his quavering response to the litany—"Good Lard, deliver us;" hear him piping with feeble, high-pitched voice "Let us sing to the praise and glory of God, the one hundred and fourth psalm." For Tate and Brady still held sway in the hymnal. Above him I see the tall and portly form of the Rector, six foot six in his stocking feet and more than proportionately broad, now in surplice in the intermediate reading desk, now in black gown giving forth his sermon from the upper pulpit; and can recall the charm of his resonant Ciceronian English, so well rounded and, like himself—courtly and aloof—so far above the bulk of his congregation, that somehow, in the Mesopotamian manner, we go away comforted, without knowing exactly what it was all about. Turning round I see, stretching across the west end of the church, the music loft with its irregular line of heads of the choir visible above the rail around the organ, and on the 18th century panels along its front read the list of "Benefactions to the Poor of Ashton-upon-Mersey"; how Jethro Okell, yeoman, had left £16, the interest to be expended annually in providing bread for the deserving poor; of Ellen Dane, spinster of this parish, and her bequest, and yet others. The organ, I may add, was a comparative innovation of the last twenty years. There were many who remembered the gallery as a music loft of the old style, such as Washington Irving described in his "Sketch Book," with bass viol and trombone and violin and horn to lead the singing. The trombone I found later was still in existence but it had descended in glory to function in a battered state as a perch in a farmer's hen house.

Under the loft and along the western wall I see the church wardens' pew with its staves of office in front—plain, early Georgian mahogany staves, some five feet in length with silver tops—emblems of authority, which in a previous generation had been borne by the wardens when they stepped out during the Litany to awe loiterers in the churchyard, or rout those drinking during service in the village ale houses. How well I remember the satisfaction of being sufficiently late to be invited along with my father to slip into that pew rather than disturb the children on their knees in the aisle: the summer breeze blowing in upon us through the open church door: the glimpse through the porch across the peaceful sunlit churchyard: the masterly survey therefrom of the whole congregation, with its veterans, those who prided themselves upon belonging to an older, more austere race, standing erect during the prayers.

All, alas, or almost all, has departed or become altered until little is recognizable. That country lane when last I passed down it had become converted into a street with rows of mean dwellings of soul-destroying similarity, for the railway and electric cars have turned the village into a suburb of the great city six miles distant; a nondescript tower, several sizes too big, which purports to be, but is not, in the Cheshire "magpie" style has been added to the church, and a chime of tubes installed which can be heard a quarter of a mile away when the wind is blowing steadily from the right direction. Gone is the three-decker, the parish clerk, the old rector; gone too the comfortable square pews; gone almost everything that gave distinction to old St. Martin's. The school children who lined the aisle—that is, their successors—now appear, the majority of them, to be turned into a surpliced choir in the chancel: with painful results.

What, you will ask, has all this to do with Charles White, surgeon? Only this, that sitting as a boy in that old square pew, there was over against me a marble tablet which constantly caught my eye, that I read and re-read until even now I can repeat it by heart. There was something in its formal wording, something in the rotundity of its periods, something in what it suggested of the greater world, that exercised a fascination upon me. Let me read it to you:

NEAR THIS PLACE lieth the Body of
THOMAS WHITE, M.D.

Who died July 20 1776 aged 80 and

ROSAMUND His Wife who died April 23 1777 aged 80.

Beneath this Marble

lieth also the Body of

CHARLES WHITE

Member of the Corporation of Surgeons and

Fellow of the Royal Society

who

after rendering himself eminent in his Profession

for the space of sixty Years

by a Dexterity and Extent of Knowledge

scarce exceeded by any of his Cotemporaries,

retired

to the Enjoyment of rural and domestic Felicity

in the Society of his Family and Friends

at Sale within this Parish.

He died on the 20th of February 1813 aged 84.

ALSO the body of JOHN BRADSHAW WHITE

Who died April 27th, 1797 aged 27.

Little did I dream in those days that perchance I too should be one of the elect of the Royal Society, and a member of the Corporation of Surgeons, or what it blossomed into before White's death, the Royal College of Surgeons of England. Or did I dream, and has that old epitaph colored my life? Who can tell? There it was and there I read it Sunday after Sunday.

When I came to ask about this Charles White, village gossip could only tell me that he had been a well known Manchester doctor, a character who had collected all sorts of things, including the body of an old lady friend of his who had left him a large fortune on condition that she should be kept above ground, and that he had made her into a mummy and boxed her in a case over the stable so that she might not be too obtrusive; and there she might still be for all my informants knew. Certain it was that there was a popular objection to being in the vicinity of the out-buildings of the Priory on dark nights because of her ghost, though this was becoming a matter of hearsay. Then also it was handed down that when at the beginning of last century the fear of invasion by Napoleon led to the formation all through the country of volunteer and fencible regiments, there

had been a great review of the Lancashire and Cheshire battalions on the Sale Ees, or water meadows, at the other end of the parish, and that Dr. White had then entertained the Duke of Gloucester, George the Third's son, at Whitehall, as his house was styled by the neighbors. Was not the memory of the band of Ashton and Sale Volunteers of brief existence kept green by its decaying flag hanging in the old church?

Such is local fame! Nothing was known of Charles White's real claims to be remembered, of the work that must surely carry his name down to other centuries.

For Charles White was not merely a brilliant surgeon, a useful and notable character in his day, but one who developed a work to the benefit of humanity that should not readily be forgotten by us. During the last two or three generations it is true his memory has suffered neglect. Latterly what he accomplished is coming to gain the recognition that it deserves. He has been the text of addresses by Whitehead and Lloyd Roberts. Dr. Brockbank has given a clear presentation of the main facts of his life and activities in his recent volume upon Manchester medical worthies, and there has appeared a delightful appreciation published as a separate volume from the pen of my old teacher, and—may I add?—friend, Professor Cullingworth. It is to this last that I am more particularly indebted for the facts that I bring before you. It amplifies and gives a right value to the notes that I have made at various times. Here I will not trouble you with minute details: I only seek to give you the broad aspects of his life and what he accomplished.

Dr. Thomas White, whose name heads the epitaph I read out to you, practiced throughout his life in Manchester, and there was born his eldest child and only son, Charles. This was in October, 1728. In February of that same year John Hunter came into the world.

He gained his schooling at Manchester, and whilst still a boy began his life's work assisting his father in his midwifery practice, which was large, for Thomas White was the appointed doctor to the poor of the town. It would seem indeed from Charles White's generous acknowledgement of what he owed to his father and his methods that Dr. Thomas White deserves to be remembered equally with his more celebrated son. There were then no medical schools in the provinces, for Oxford and Cambridge, though they afforded occasional "anatomies" and gave degrees in medicine, had no adequate course of hospital

study; and as for hospital opportunities in Manchester, it was Charles White himself who launched the first hospital there. Experience was gained in the main from apprenticeship, and it would seem that Charles acted as apprentice to his father. His wider education away from home began at the age of 20 when he went up to London. The first lectures he attended were those upon Anatomy by William Hunter, the elder of the two great brothers. We know the date, for William had started his course two years earlier, and in September, 1748, John, his junior by ten years, joined him, and this autumn course was the first also that John attended; not merely attended but helped in preparing the illustrative dissections. There at these lectures began a friendship between Charles White and John Hunter, both fresh to London and fresh to the medical school, which was destined to continue through life.

William Hunter through all the accounts that have reached us was a brilliant lecturer, and doubtless had an influence upon White. Other good teachers in London at that time were few and far between, whether in the lecture room or in the wards. Doubtless also Edinburgh, which had a more regular school and course of teaching, and where White, I gather, spent the next winter, had also its influence. It has often seemed to me, however, that with rare exceptions—as in the case of a Boerhave or, as here in Montreal, of a Palmer Howard or an Osler—it is not so much the teachers that inspire, that are the creators of the strong men of the coming generation, as it is the mutual influence of fellow students. Coming from one who is a teacher this may seem a humiliating conclusion to have reached, and yet recalling my own experience, my old school, and my old college at Cambridge, and calling to mind the histories of those who as writers or men of action have made their mark in the world: nay, taking history in general, I see in the first place that a school, or college, or country, may for a succession of years produce no one of special mark, and then suddenly, as it were, a band of fellow students and intimate friends arises, each one of whom stands out as a marked man if life be granted. Even here at McGill I think I see manifested the same phenomenon. It is not that we, the teachers, have varied as a body or individually in our powers of impressing the taught, but certain it is that now and then in one year a larger or smaller group—men, generally, as I say, intimate friends—comes to the fore, and those men even in their university career stand out clearly as of

promise, and following their careers one sees that the promise is being fulfilled. It is not any conjunction of the stars in an auspicious house, or recondite association of circumstances, that leads to this phenomenon, undoubted as it is interesting. It is, I feel convinced, the influence of mind upon mind, or spirit on spirit, of steel sharpened by steel. One single man entering a single coterie may be at the bottom of the whole, imparting his generous enthusiasm to those with whom he comes familiarly in contact. We meet of course with exceptions, your solitary men: your Carlyle for example, who apart from his fellows, self contained, self confident, forges ahead despite school, despite lack of close friends. But I like to think that just as in their early manhood Cullen and William Hunter influenced each other, so John Hunter and Charles White, in that winter of 1748-1749 told upon each other for their mutual great advantage.

Back in Manchester Charles White rapidly came to the front. He was a strong man with an intense energy. Already in 1752 before he was 24 we find him, with the support of a Mr. Joseph Bancroft, undertaking the charge of a small house rented for use as a hospital—the first public hospital to be established in the town. And here the work was carried on with such immediate success that at the end of the year others become interested, public meetings are held, and subscribers come forward liberally; the small house is found altogether too mean and contracted in its accommodation; ground is given and plans made for a hospital of 40 beds; and by April, 1755, what is now known as the Royal Infirmary—one of the great hospitals of England—is opened, with Charles White at the head of the list of surgeons. And as head of the surgical staff he remained for 38 years, until 1790.

In 1762, seven years before John Hunter, and at the age of thirty-four, he was elected to the Royal Society—no small distinction for a provincial practitioner—and in that same year was admitted a member of the Corporation of Surgeons. By the time he was forty he was recognized as the leading surgeon or the North or England, a position demanding long journeys, which until an advanced age he took on horseback, apparently incapable of fatigue. De Quincey, in his "Autobiography," describes how the fine old surgeon impressed him, then a boy of sixteen, when, in 1800, he was for some days in his company, White having been called to attend upon a case in the Midland counties, in Rutlandshire.

Despite his large practice he—like John Hunter—was an enthusiastic anatomist, and when in 1783 a College of Arts and Sciences was established in Manchester, the first practical movement of its kind in the provinces, he took charge of the anatomical department and was able to illustrate his lectures with his own collection of preparations—some 300 in number. That collection he presented in 1808 to the Maternity Hospital, which he had been instrumental in founding, and while part was destroyed by fire in 1847, I have the impression that the zoological specimens became, through the Natural History Museum, the nucleus of the present notable collections in the Museum at the Owens College. Here again White followed the example of the two Hunters.

It was to this collection that for a time the celebrated mummy already referred to was added. A wealthy old maiden lady—Madam Berwick—had a horror of being buried alive. A relative of hers traveling in Spain had very barely escaped such a fate, being saved by a friend who stopped the funeral cortège as he returned from a journey, and demanded a last look at his face. Dying in 1757 or 1758 this old lady left a very considerable bequest to Charles White on condition that she should be kept above ground for 100 years. The doctor duly embalmed her, swathed her in ticking, and placed her upright in a kind of clockcase in his museum. Later when he retired to Sale she was deposited in an attic at the Priory. I will not detain you with an account of all her wanderings after White's death in 1813, save to state that she eventually found herself for long years an object of considerable local interest in the Natural History Museum at Manchester, and that her funeral was so long delayed—until 1868 (at least ten years later than she had stipulated)—as to cause considerable trouble, and this because no one could be found to certify from personal knowledge—as the law demands—the facts regarding her death.

Active, genial, in the forefront in all movements for the improvement and advance of the community to which he belonged, Charles White to this extent was not remarkable above many a leading provincial practitioner. These facts alone would not suffice to make him memorable. It is when we come to inquire into his work and his writings that we see the strength and influence of the man and understand the place he takes in the history of medicine. He is noticeable in the first place as having been an early promoter of conservative surgery. If not the

first to excise the head of the humerus for caries of the shoulder joint, he would, in 1768, appear to have been the first to remove the head of the bone and both articular surfaces of the joint—this instead of removing the whole arm. Again he was one of the first—if not the first—to excise the whole shoulder joint. He proposed the removal of the ends of the bone in cases of ununited fracture. This in 1760. He recommended the employment of dried sponge for the arrest of hemorrhage from large arteries: a method which, as Professor Cullinworth points out, is now-a-days employed exclusively by Sir Victor Horsley in his brain surgery.

But these facts while undoubtedly to his credit are not, if one might so term them, of the very first order. As a country practitioner, before the days of specialism, and at a period when at length the care of the lying-in patient had been wrested from the midwife, Charles White stands out as a great obstetrician, and his fame must rest in the first place upon what he accomplished in the care of woman in her confinement. In the days when men midwives were few and far between, and the profession in general regarded obstetrics with aversion, Thomas White, the father, had already made a name for himself, and had performed the first Cæsarean operation in that part of the country. Charles White followed and advanced his father's practice, and in the work to be presently mentioned freely attributes his methods and his success to his father's example. His experience in this branch of our art he gave to the world at 1773, when he was forty-five, in a treatise which within 20 years went through four if not five editions in England; was translated into French the year of its first publication, and into German within two years, and was reprinted at Worcester, Mass., in 1793.*

To these facts I would draw especial attention. It is clear from these editions following rapidly one upon the other that White's work was not hidden beneath a bushel, but was well known and appreciated in his own time, and this not merely in the country of his birth, but very far afield. I find no less than three copies in our library. The neglect which it has suffered for long years cannot be ascribed to its having been given forth in an obscure or ephemeral local journal and can only be due to the fact that, popular as it was during its author's lifetime, it gradually passed

* I hope to give a note on the various editions in a later number of the JOURNAL.

out of fashion; to the fact also, it may be, that those who quoted it (for it was quoted), obtained their data from previous references, not from the work itself; or if they did read the book, read it with blind eyes, not appreciating its obvious lessons. For this treatise of Charles White on "The Management of Pregnant and Lying-in Women and the means of curing, more especially of preventing, the principal disorders to which they are liable," is a very remarkable book: one that marks an epoch in the history of obstetrics. Here I cannot enter into the many important advances that he introduced into his own practice and recommended. One of them, at least it seems to me, still in advance of general practice to-day.*

Yet another series of important observations in this branch of medicine stands to his credit, namely, his studies upon "white leg," a condition which he, in 1784, was the first to recognize as a morbid entity and to describe fully. His colleague, John Hull, gave to it the name "Phlegmatia dolens," which White in a later paper expanded to the name by which it is still labeled, "Phlegmatia alba dolens puerperarum."† At this hour I will not enter into White's views regarding its pathology—you may know that this is still unsettled. The condition is not in itself fatal and is in general transient so that cases rarely present them-

*Just as the most modern surgeons practice free drainage and the placing of the patient after severe operation in such a posture that this free drainage is favored, so White recommended that so soon as possible after delivery the patient be made to sit up or be placed in a reclining position to the end that the lochia and discharges from the womb gain a free exit and are not retained so as to undergo putrefactive changes, and, what is more, that she should get up and about on the second or third day at the furthest. It may be urged that such practice neglects wholly the danger arising from a possible thrombosis of the pelvic veins, and of sudden death from embolism. Possibly there is some force in this objection; but it may be suggested that if, as we are coming more and more to the conviction, such thrombosis be of infective origin and not immediate, only showing itself in the larger veins several days after confinement, then "free drainage" of the uterus brought about by the erect posture should be in itself a direct preventive of the development of the condition. White's other recommendations which are now generally followed are, (1) the use of a cold or temperate bath after pregnancy and lactation to bring about improved tone; (2) that the shoulders of the child be expelled by labor pains, instead of by pulling at the head the instant this appears; and (3) that the circulation between the child and placenta be allowed to cease spontaneously instead of being immediately interrupted by tying the cord upon delivery.

†I note that French writers still retain the original spelling of "phlegmatia" rather than "phlegmasia."

selves for histological study at a period when the lesion is recent. The swelling of the lower extremities may however last for a considerable time, and I am reminded here of the consolation afforded, in all seriousness, by a dear inconsequent old maiden lady of my acquaintance to a newly married relative of hers, who was lamed by this condition after the birth of her first child: "You must not be cast down and hopeless, my dear; Mrs. Blank, whom I knew well, had the same trouble come on likewise with her first and she recovered completely after the birth of her ninth"!

At the ripe age of eighty-two, still hale and active, or, as he expresses it, with as much activity and good health as generally falls to persons of that age, White gave up his large house in Manchester and retired "to the enjoyment of rural and domestic felicity at Sale"—to the house that had been his father's before him. Increasing blindness became complete; during the latter months of 1812 he gradually failed, dying in February, 1813.

My particular object this evening is to direct your attention to his greatest achievement: the arrest, in Lancashire, at least, of that terrible complication, puerperal fever. The other, miliary fever, the meaning of which he recognized and banished from his practice we never see nowadays, thanks to the adoption of White's general principles. But puerperal fever we still have with us, though not by any means to the frightful extent of the past. Those ravages were appalling. They were greatest in certain lying-in hospitals. As White notes, in one London hospital, from 1767 to 1772, of 622 cases of delivery 16 died in the house, or more than 1 in 39, while other hospitals in certain years showed mortalities of 1 in 25½, and 1 in 28, 1 in 37, and so on.* The frequency of the disease varied in different towns. London in general had a bad reputation. Here the patients were attended wholly by midwives, and comparing two of the many lying-in hospitals, one with a high mortality, another with a low, he found that the latter was situated near and open to the fields, with few patients in the same room, whereas in the other hospital there were eighteen or twenty in a room which ought only to receive eight. In Northampton, another focus of the disease, again he found that patients were

*In his second edition (p. 358) he quotes from a MS. copy of Dr. William Hunter's "excellent lectures on the gravid uterus," that in one year it was so fatal that at one London charity in two months 32 patients were seized with the fever, of whom only one recovered.

committed solely to nurses, kept in close, warm rooms and plentifully supplied with cordials and aromatics, gin, and other spirituous liquors. Whereas in Edinburgh, which had a good reputation, the management was in the hands of the Professor of Midwifery, Dr. Young, and the lying-in women kept as cool as those who are inoculated for small-pox.

Manchester also in those days had a bad reputation, and knowing what we do nowadays regarding the nature of puerperal fever and reading his account of the usual treatment of lying-in women, there is little wonder. This is how he paints that treatment: *

"When the woman is in labour, she is often attended by a number of her friends in a small room, with a large fire, which, together with her own pains, throw her into profuse sweats; by the heat of the chamber, and the breath of so many people, the whole air is rendered foul, and unfit for respiration; this is the case in all confined places, hospitals, jails, and small houses, inhabited by many families, where putrid fevers are apt to be generated, the more so where there is the greatest want of free air. Putrid fevers thus generated are infectious, witness the black assize, as it is usually called.

"If the woman's pains are not strong enough, her friends are generally pouring into her large quantities of strong liquors, mixed with warm water, and if her pains be very strong, the same kind of remedy is made use of to support her. As soon as she is delivered, if she be a person in affluent circumstances she is covered up close in bed with additional cloaths, the curtains are drawn round the bed and pinned together, every crevice in the windows and door is stopped close, not excepting even the keyhole, the windows are guarded not only with shutters and curtains, but even with blankets, the more effectually to exclude the fresh air, and the good woman is not suffered to put her arm, or even her nose out of bed, for fear of catching cold. She is constantly supplied out of the spout of a teapot with large quantities of warm liquors, to keep up perspiration and sweat, and her whole diet consists of them. She is confined to a horizontal posture for many days together, whereby both the stools and the lochia are prevented from having a free exit. This happens not only from the posture of the patient, but also from the great relaxation brought on by warm liquors and the

**Loc. cit.*, p. 4.

heat of the bed and room, which prevent the overdilated abdominal muscles from speedily recovering their tone. . . .

"The lochia stagnating in the womb and in the folds of the vagina soon grow acrid. . . . These are in part absorbed by the lymphatics in the womb and vagina, and the effluvia from them help to make the air in the bed, and in the room more putrid; this air in every act of inspiration is taken into the lungs, and is then again received into circulation. . . .

"Amongst the poor people who live in cellars and upon clay ground floors, the air is made still worse by the dampness and closeness of their houses, and the want of clean linen, and cleanliness in general. Those who live in garrets are also in no better a situation, for the putrid miasmata of several families inhabiting the lower part of the house ascend to them. . . .

"In a few days after delivery, the patient is perhaps seized with a shivering fit, and the nurse is surprised, as she protests she has not had the least waft of cold; more cloaths are heaped upon her, to throw off the cold fit, which most certainly increase the succeeding hot one; a warm room, plenty of cloaths and warm drinks are continued to throw her into a sweat, but have frequently a contrary effect, by increasing and prolonging the burning fit, which at last terminates in a profuse putrid sweat, continuing many nights and days without giving relief." From this White goes on to describe the main features of fully developed puerperal fever.

Discussing the cause of this condition White lays down that it does not appear that it can be ascribed to simple inflammation—the patients are seldom affected with those excruciating pains which generally attend common inflammations of the bowels, "but it evidently," says he, "manifests itself to be of the putrid kind, occasioned by human effluvia, by accumulation of acrid putrid bile, and of a putrid colluvies through the whole intestinal canal and organs of generation, and is a malignant fever of the same form as the jail or hospital fever." A true puerperal fever he insists "is originally caused by a putrid atmosphere, etc." Foul air and surroundings and more particularly the retention of the lochia and the excreta are in his opinion the *primary* cause of the appearance of puerperal fever. He is far from denying that once developed it may be conveyed to other lying-in women. It is indeed abundantly obvious that he fully recognized that puerperal fever was in this respect exactly parallel to the diseases with which he compares it—hospital and jail

fevers. But these are the primary causes, and it is along these lines that he formulates the methods of prevention:

"The lying-in room should be a large lofty room upon the first chamber floor," preferably with a northern aspect. There should be no fire in it in summer and as little as possible in winter. In the whole "article of dress and bed cloaths nothing should be added to what the patient has been accustomed to in perfect health." The patient should lie with her head and shoulders very high and should sit up in bed when she takes her food and as often as she suckles her child, and should kneel whenever she has occasion to make water which should be often done. "This frequent upright position" he says, "is of the utmost consequence and cannot be too much enforced. It prevents the lochia from stagnating, the stools and urine from being too long retained and promotes the contraction of the uterus together with that of the abdominal muscles." The food should be simple and bland, the drinks cool and cooling and not spirituous; any water taken should be pure and not tainted. "When the . . . morbid matter is thrown off by the skin it must be an act of nature, and the most probable means of promoting that end is to keep the patient in that kind of heat which nearest approaches the standard of health, at the same time promoting a free circulation of air, that those morbid particles and the human effluvia may not stagnate about the patient but be carried off." "The chamber door and even the windows, if the weather be warm, should be opened every day. There should be no board or other contrivance to stop the chimney, on the contrary it should be quite open, that it may act as a ventilation." The curtains (of the bed) should not be close drawn. The room should be brushed and the carpets taken out every day to be cleaned and aired. In short: "The lying-in chamber should in every respect be as sweet and clean and as free from any disagreeable smell as any other part of the house. The patient should often be supplied with clean linen; for cleanliness, and free, pure, and in some cases cool air, are the greatest necessities in this situation. . . . Clean, well-aired sheets should be laid upon the bed, but by no means such as have been lain in since washing." A stool ought to be procured daily. No irritating forcing mixtures should be used to promote the flow of the lochia: they never do any good. Speaking of variations in the amount of flow of the lochia he inculcates that "the danger does not arise from the smallness of the quantity of the discharge but from

its stagnation whereby it becomes putrid, and in this state is again absorbed into the circulation."

He further gives his ideal of the lying-in hospital—"so contrived that the air should be kept in constant circulation." An entire apartment should be allotted to every patient, or else, if large wards were constructed, the windows should be placed very high." "It will not be sufficient if a door or even a window be opened a little in the middle of the day only." So he discusses and advises methods of free ventilation. "I am afraid," he continues, "that no methods will be effectual where several lying-in women are in one ward." If separate apartments cannot be allowed to every patient, at least "as soon as the fever has seized one she ought immediately to be removed into another room, not only for her immediate safety, but for that of the other patients." "Or it would be still better if every woman was delivered in a separate ward, and was to remain there for a week or ten days till all danger of this fever was over."

Lastly he lays down that "Whenever a patient has recovered from this fever and is removed into another room the bedding and curtains should be washed, the floor and woodwork should be cleansed with vinegar, and it would still add to the salubrity of the apartment if it was stoved with brimstone."

In the third edition he concludes his chapter upon treatment with a remarkable paragraph: "I must not omit to mention in this place the good effects I have experienced from emollient or antiseptic injections into the uterus, by means of a large ivory syringe or an elastic vegetable bottle. In those cases where the lochia have become acrid or putrid, and, by being absorbed into the circulation, have served as constant fomes for the disease, I have by this means known the fever much assuaged, and in many cases wholly extinguished; for, though, as I have before observed, the quantity of the lochia is not to be much regarded, the quality of this discharge is a matter of infinite importance." *

And these words, let me emphasize, were not written in 1872—even then their teaching would have been somewhat premature—but in 1772, or at the latest, as regards the last paragraph, in 1784. Nor were they merely counsels of perfection, for he here

*In the second edition, the treatment recommended was asptic rather than antiseptic. He advised that whenever the lochia became offensive, warm water should be frequently injected into the uterus by means of a syringe which had "a thick syphon and a little curved."

stated the methods that he was used to employ. He is able to make the following statement: "It would be easy to produce a long list of successful cases; successful cases avail nothing, where the unsuccessful are concealed. It is evident that by much the greater part of the sex will do well, even under the worst treatment. The practitioner therefore can only judge from the result of general practice; and here for the sake of the most important argument I can use, I am obliged to refer to a fact, which otherwise could scarcely be mentioned without a shew of ostentation which I despise. Out of the whole number of lying-in patients whom I have delivered (and I may safely call it a great one) I have never lost one, nor to the best of my recollection, has one been greatly endangered, by the puerperal, miliary, low nervous, putrid malignant, or milk fever; nor have any of these fevers ended in madness, or any other disagreeable complaint. Some few indeed have had the puerperal fever, but this has evidently arisen from non-observance of the rules above laid down."

It may be well here, from these quotations, to analyse what was Charles White's teaching. Clearly it is the following:

1. That puerperal fever is primarily and essentially a filth disease, due to foul surroundings and to the retention of discharges, and the opportunity that this affords for decomposition and putrefaction, conditions which may be prevented by proper treatment and strict cleanliness.

2. That it is not a specific disease, but is of the same order as the old hospital and jail fevers which likewise were brought about by overcrowding, filth, and foul air.

3. While this is the case if due care be not taken and strict cleanliness not exercised, the disease may be carried from one lying-in case to another, as shown by its endemic character in certain cities and towns and its infrequency in others. Whence it is advisable that so soon as the fever seizes a patient in a lying-in ward she be moved to another room.

4. That similarly when a case has occurred that room be disinfected and subjected to thorough ventilation.

5. That the use of emollient and antiseptic injections where the lochia becomes foul is a distinct advantage.

I dwell on these points, gentlemen, because of late there has been a movement to ascribe to one whom we all honor, the additional honor of being the pioneer in bringing vigorously before the profession the nature of puerperal fever and of indicat-

ing how it should be prevented. It is contended that this honor belongs to Oliver Wendell Holmes, and that his writings upon the subject in 1843, were the first serious pronouncement upon the matter. At this very moment there is proceeding a controversy as to whether the credit be granted to him or to the great Hungarian, Semmelweiss, whose work was published in 1847—to whom it is generally given. Only in a recent number of the *British Medical Journal* is an article by Györy, of Budapest, pointing out that to Semmelweiss belongs the credit of being the first to propagate what we recognize as the correct view, *i. e.*, that puerperal fever is not a specific disease, and calling attention to the fact that great as was the service rendered by Holmes he nevertheless was a contagionist, holding, that is, that every case proceeded from a previous one, *id est*, that the disease is of a specific nature, and that as such he cannot be regarded as the first, for others before him had emphasized its contagious nature. In justice to Holmes it must be acknowledged that he admitted implicitly that the disease could be communicated from previous cases of erysipelas and wound fever, even if his main contention was that it is the attendant who carries the disease from case to case. It is, indeed, Holmes's courageous and eloquent demonstration of this method of conveyance, and of its frequency, that is his great claim to remembrance in the matter.

The upholders of Semmelweiss base his claim to recognition on the fact that "he discovered that puerperal fever and pyemia were identical processes and proved that puerperal fever may result by the absorption of any decomposing organic substance."

Now from what I have read out to you it is obvious that this is identically White's teaching. If he did not lay down that it was identical with pyemia he drew a comparison between it and hospital fever, a comparison which it would seem to us is, strictly speaking, more correct, for pyemia proper, as we now understand it, is more particularly due to the *pyococcus aureus*, whereas hospital and gaol fever according to the descriptions given were characteristically phlegmonous erysipelas and cellulitis, conditions like puerperal fever, preëminently of the nature of streptococcus infections. Seventy-five years before Semmelweiss not merely did White teach this but showed in a masterly manner the methods that lead to its arrest. Nay he could state that he and his fellow practitioners using these methods had

materially reduced the incidence of this disease.* Neither to Semmelweiss, nor to Oliver Wendell Holmes, but to Charles White must be awarded the credit of a right recognition of the nature of the disease and of the means to be employed for prevention.

It is on this account that White's name cannot pass into oblivion, and I have thought it right to inflict upon you this long talk this evening.

I might mention to you yet other of Charles White's activities and publications, professional and otherwise: might also refer to the band of able friends and colleagues associated with him: to Percival, deeply read and learned, a pioneer in public health work among work-people, to "Magnesia Henry," to the Halls, and to Ferriar, the acute commentator upon Tristram Shandy and his origins. But I must desist, satisfied if I have made you acquainted with a fine old provincial practitioner, one who must deservedly be ranked foremost among the high priests of Lucina.

* "I have the pleasure to observe that those fevers, in this neighborhood at least, have of late years greatly decreased. This must chiefly be attributed to a system of management lately introduced, much to the honor of our present practitioners and of those nurses who seem sensible of the advantages arising from it; and I must here do my brethren the justice to assert that I do not know a place where midwifery is more successfully practised."

—*Loc. cit.*, 1st edition, p. 153.

